TURKEY RUN BRIDGE
George Washington Memorial Parkway, spanning Turkey Run and Access Road
McLean Vicinity
Fairfax County
Virginia

HAER No. VA-71

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

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I. INTRODUCTION

Location:	George Washington Memorial Parkway milepost 1.340; 1.4 miles south of Interstate 495; carries GWMP over Turkey Run, a tributary of the Potomac River near McLean, in Fairfax County, Virginia.
FHwA Structure No.:	3300-002P.
Date of Construction:	1960-1961.
Type:	Continuous steel girder bridge.
Designer:	Bureau of Public Roads, Region 15 in conjunction with National Park Service architectural staff.
Contractor:	Case Construction Company, Mt. Airy, Maryland.
Present Owner:	National Capital Region, National Park Service.
Present Use:	Carries non-commercial traffic over Turkey Run.
Significance:	Built as part of a project to extend the GWMP closer to a proposed terminus at Great Falls, Virginia.
Project Information:	Documentation of the George Washington Memorial Parkway and Clara Barton Parkway was undertaken as a multi-year project by the Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER), a combined division of the National Park Service, Robert Kapsch, Chief. The project was sponsored by the Park Roads Program of the National Park Service, John Gingles, Deputy Chief, Engineering and Safety Services Division. The Project Supervisor was Sara Amy Leach, HABS Historian. Bridge reports were prepared by Elizabeth M. Nolin (1988); Michael P. Kucher (University of Delaware, 1993); and Jennifer P. Wentzien (University of Washington, 1994). HABS Report No. VA-69 prepared by Timothy Davis (University of Texas) provides an overview history of the entire parkway project. Jack E. Boucher and Jet Lowe produced the large-format photographs. The Washington-based summer 1994 documentation team was headed by landscape architect Tim Mackey (Harvard University, Graduate School of Design).

II. HISTORY

The Bridge over Turkey Run is one of several bridges designed in the late 1950s to carry the George Washington Memorial Parkway (GWMP) closer to its terminus at Interstate 495. The completion of Turkey Run and Dead Run Bridges (HAER No. VA-70) connected the GWMP with the Capital Beltway. The two bridges were designed, bid and constructed on the same contract. They are of similar design.

The completion of the Turkey Run Bridge was delayed by a strike at their supplier of structural steel and when the delivery finally came it was not cut to specifications which cause further delays. It was also reportedly difficult to find skilled bridge carpenters.[1] It is the only bridge project on the upper part of the GWMP for which we have record of a fatal construction accident. A Caterpillar front end loader backed over a laborer his first morning on the job.[2]

The architectural design of the bridge reflects the popular aesthetic of the post-war period succinctly described by Christopher Tunnard as "the lighter and cleaner the silhouette, the better the design."[3] These ideals are expressed at this and other bridges along the northern segment of the GWMP in the design of metal railings, cantilevered "T" shaped piers, and a reliance on exposed structural details for ornamentation. This aesthetic is in many ways the antithesis of the massive stone-faced concrete arches of earlier parkway bridges.

A combination of factors including advances in engineering, changing aesthetic ideals and difficult site conditions contributed to the shift in design aesthetic of parkway bridge structures. The Turkey Run Bridge is an example of the more functionally derived later bridges. The concrete wing walls are left exposed and detailed with v shaped grooves and the textured, board-formed surfaces. The riveted connections of the steel plate girders also create a visual interesting design.

Description

Turkey Run Bridge is a divided four span continuous steel girder bridge on concrete piers and abutments. Two inside spans measure 108'-4" and outside spans are 86'-8". The overall length including wing walls is 483'-6". Minimum ground clearance is specified as 14'-6". Twin roadways measure 24' with 2' low curbs on either side. Outside walkways are 5'-3" wide and high curbs bordering on the median are 2'-9" wide. Between the twin decks is a 20'-6" open median. Overall width of each of the twin deck spans is 36'. The total width of the combined spans is 92'-6".

Some blasting was used during excavation for the foundations, which are cast in place spread footings. East and west abutments were altered during construction to protect the graded slopes against erosion. Three pairs of "T" shaped reinforced concrete pier and cross beam assemblies provide intermediate support each deck. Pier shafts were accordingly formed with steel "efco" forms. Reinforeed concrete wing walls

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[1]Bureau of Public Roads, "Final Construction Report Project 1A17 and 1A18," 1961, p. 6.

[2]Ibid.

[3]Christopher Tunnard, Man-made America: Chaos or Control?, 1963, p. 244.

were formed with 1x6 tongue and groove boards for aesthetic reasons. Concrete was supplied by the Virginia Concrete Corp. of Falls Church, Virginia. The spans are comprised of a continuous steel girder and floorbeam system which is anchored to the piers and abutments with steel girder shoes. Structural steel and steel bridge railings were fabricated by Atlas Iron and Machine Works. Joints are welded. BPR Laboratory conducted extensive materials testing for this as for other GWMP bridges. NPS specified a "foliage green" paint for exposed steel, a color popular on northern GWMP bridge. Railings were black, seamless, extra-strong, plain end, square cut steel pipe.

The bridge is designed to carry a standard H-20 loading of the American Association of State Highway Officials. An H-20 loading accounts for a two axle truck with a gross weight of 20 tons and does not consider tractor trailer loading.[4] Construction was under BPR Standard Specifications F.P.-57. Final construction costs for the combined contract for Turkey Run and Dead Run Bridges were reported as $835,111.93 with an additional $64,181 for engineering.[5]

Alterations

In 1976 the deck was repaired and a cathodic protection system installed. The cathodic protection system employed a mixture of coke breeze and asphalt cement to provide corrosion protection.[6] This project is an early example of cathodic protection applied to architectural structures. The principle is to create a low voltage current flowing in the opposite direction of that which is causing corrosion of the steel reinforcement.

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[4]American Association of State Highway Officials, Standard Specifications for Highway Bridges, 7th edition, 1957.

[5]"Final Construction Report Project 1A17 and 1A18."

[6]Federal Highway Administration, Office of Research, S.R. Spelman, "Design of Asphalt-Coke Breeze Paving Mixtures for Cathodic Protection Systems," May, 1976.

III. SOURCES

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